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## SCIENTIFIC JOURNALS AND ARTICLES

THE opening (January) number of volume 12 of the *Transactions of the American Mathematical Society* contains the following papers:

L. E. Dickson: "An invariantive investigation of irreducible binary modular forms."

W. H. Bates: "An application of symbolic methods to the treatment of mean curvatures in hyperspace."

H. F. Blichfeldt: "On the order of linear homogeneous groups (fourth paper)."

J. L. Coolidge: "The metrical aspect of the line-sphere transformation."

Edward Kasner: "Natural systems of trajectories generating families of Lamé."

L. E. Dickson: "A fundamental system of invariants of the general modular linear group with a solution of the form problem."

R. D. Carmichael: "Linear difference equations and their analytic solutions."

THE February number (volume 17, number 5) of the *Bulletin of the American Mathematical Society* contains: Report of the fourth regular meeting of the Southwestern Section of the society, by O. D. Kellogg; Report on "University courses in mathematics and the master's degree," by the American sub-committee of the International Commission on the Teaching of Mathematics; Review of Doehlemann's *Geometrische Transformationen*, zweiter Teil, by Virgil Snyder; Shorter Notices: Sylvester's Collected Papers, Vol. III., and Bachmann's *Niedere Zahlentheorie*, zweiter Teil, by L. E. Dickson; Burali-Forti and Marcolongo's *Eléments de Calcul vectoriel*, by E. B. Wilson; Lebon's *Gaston Darboux*, by J. W. Young; Killing and Hovestadt's *Handbuch des mathematischen Unterrichts*, by D. D. Leib; Amodeo's *Analisi algebrica elementare*, by C. L. E. Moore; Rietz and Crathorne's *College Algebra*, by J. V. McKelvey; Planck's *Prinzip der Erhaltung der Energie*, second edition, by E. B. Wilson. "Notes"; "New Publications."

THE March number of the *Bulletin* contains: Report of the seventeenth annual meeting of the society, by F. N. Cole; Report of the winter meeting of the Chicago Section, by H. E. Slaught; Report on "Preparation

for research and the doctor's degree in mathematics," by the sub-committee of the International Commission on the Teaching of Mathematics; Shorter Notices: Frankland's *Theories of Parallelism*, by D. E. Smith; Vogt's *Synthetische Theorie der Cliffordschen Parallelen*, by E. B. Cowley; Bruns's *Gruppenschema für zufällige Ereignisse*, by H. L. Rietz; W. W. Johnson's *Elementary Treatise on the Differential Calculus*, by E. W. Ponzer; Becker and Van Orstrand's *Hyperbolic Functions*, Fabry's *Problèmes et Exercices de Mathématiques générales*, and Couturat's *Internacione matematikal Lexiko en Ido*, by J. B. Shaw; Richarz's *Anfangsgründe der Maxwellschen Theorie*, by E. B. Wilson. "Notes"; "New Publications."

THE FIFTH ANNUAL REPORT OF THE  
PRESIDENT OF THE CARNEGIE  
FOUNDATION

PRESIDENT PRITCHETT'S annual report gives a full and clear statement of the business of the Carnegie Foundation for the Advancement of Teaching during the year ending November 30, 1910, and includes an essay on the relations of colleges and secondary schools.

The University of California, Indiana and Purdue Universities, and Wesleyan University have been added to the accepted list of the foundation. The two state universities—for Indiana and Purdue form together essentially one state university—obviously meet standards which allow the admission of colleges such as Beloit, Carleton, Coe, Dickinson, Drake, Drury and Knox. The tax-supported universities previously admitted are Michigan, Wisconsin, Minnesota, Missouri and Toronto. It seems to the present writer most unfortunate that the executive committee of the foundation should prescribe to the state universities what they must do in order to receive pensions. Illinois has been told that it must break the agreement which it made with the professors of the medical school in Chicago; Ohio that it must reconstruct its educational policy, and the like. It is to be hoped that those in control of the state universities will resent such dictation. Indeed one can not altogether dismiss the suspicion that the

officers of the foundation have the same hope, in order to be released from obligations which they could not meet.

Wesleyan University has amended the charter which made it ultra-denominational—for it required not only the president and a majority of the trustees, but also a majority of the professors to be members of the methodist episcopal church—and although one fourth of the trustees are elected by the conferences of the church, it has complied with the rules of the foundation. Other institutions which are altering or trying to alter their church affiliations should know that the foundation will be very cautious in assuming further financial responsibility.

This appears to be at last clearly acknowledged by the president and the executive committee. The president makes the acknowledgment retroactive when he writes:

In every report issued by the Carnegie Foundation, the effort has been made to call the attention of colleges and universities to the fact that the endowment in the hands of its trustees would provide at most an adequate retiring allowance system for only a small minority of the institutions in the United States and Canada bearing the name college or university. This was most strongly urged even in the First Annual Report.

But in his first annual report, President Pritchett estimated that with the original endowment the foundation could accept from one hundred to one hundred and twenty institutions,<sup>1</sup> including payment of pensions for length of service. He wrote:

It may therefore be safely assumed that while the income of the Foundation is sufficient to carry out the original plan of the Founder it is not sufficient to extend the system of pensions, at least at first, beyond the scope which he indicated in his letter of gift. It would seem therefore clearly the true policy of the Trustees at the inauguration of the Foundation to work within these limits, giving a generous interpretation to the terms "sectarian" and "state" control.

In his letter of gift, Mr. Carnegie wrote: "Expert calculation shows that the revenue

<sup>1</sup>More than existed, having the educational standards required by the foundation, and being non-denominational and non-tax-supported.

will be ample" "to provide retiring pensions for the teachers of Universities, Colleges and Technical Schools in our country, Canada and New Foundland."

The state of the finances of the foundation is shown in the report of the treasurer, from which it appears that the receipts for the year were \$543,881 and the expenditures \$538,148, leaving a surplus income less than \$6,000. The obligations undertaken for the current year leave a deficit of nearly \$100,000. This will doubtless be met from the income of the further five million dollars which Mr. Carnegie has consented to give for tax-supported institutions. He wrote to the president of the foundation on March 31, 1908: "I understand from you that if all the State Universities should apply and be admitted Five Millions more of five per cent. bonds would be required." But there are eighty-three institutions supported by states and provinces, of which but eight have as yet been admitted to the accepted list of the foundation.

If such of these institutions are accepted as fulfil the educational requirements originally set by the foundation, the income next year would not meet the expenses, and thereafter the deficit will increase at a rate not less than \$100,000 a year. It will be necessary for Mr. Carnegie to give at least two million dollars each year in order that the income may meet the increased charges.

Under the circumstances it is not surprising that the executive committee has voted that it is not expedient in the future to grant retiring allowances outside of the accepted list, except in cases of especial significance in institutions whose standards are so advanced that within a short time the institution will be ready to apply for admission to the Foundation.

How incompletely even such a great gift as Mr. Carnegie's establishes a pension system for higher education throughout the country is illustrated by the fact that Knox College is the only institution accepted in the state of Illinois and Tulane the only institution south of Maryland and Missouri.

The financial inability of the foundation obviously accounts for the discontinuance of

the length of service pensions. What needs explanation is why they were established, why they were discontinued in the manner adopted and why they were not paid to those to whom they had been promised. Suppose that Mr. Carnegie in order to get better domestic servants and at lower wages had promised that those who wished could retire after twenty-five years of service with half wages. If he found that the arrangement did not work well or that he did not have enough money to keep up his establishment, he might very well have employed no new servants on these terms. But would he have broken his engagement with those who had served part of the time; and, if so, what would have been the decision of the courts if suit had been brought?

In his report Dr. Pritchett dismisses the breaking of the pledges of the foundation lightly with the single remark:

The experience of the year has confirmed in the judgment of the trustees the wisdom and essential justice of the action taken a year ago.

Now this is a truly remarkable, indeed an almost incredible state of affairs. The present writer has discussed the matter with some two hundred university professors in the course of the past year, and so far as he remembers not a single one of them regarded the action of the trustees as other than unwise and unjust. In the act of incorporation the objects of the foundation are stated to be to provide pensions of two kinds: (1) for long and meritorious service and (2) for old age, disability or other sufficient reason, and further "to do and perform all things necessary to encourage, uphold and dignify the profession of the teacher and the cause of higher education." In the method used to give up the pensions for length of service the foundation has certainly not fulfilled the obligations specified in the second part of its charter.

It is obvious that unless Mr. Carnegie greatly increases the endowment of the foundation it can not meet its present obligations. They obtain most of all in the case of the younger men now entering the academic career in view of its promises. It will doubt-

less be necessary to give up the retiring allowances, for age and confine them to disability. The present writer does not regret this, for reasons which he has fully stated (SCIENCE, April 2, 1909).

Retirement at the age of sixty-five has substantially the same drawbacks as retirement after twenty-five years of service. Men who are less competent or who are not in favor with the administration will be retired; and instead of security and loyalty, there will be unrest and bitterness. The president will be quick to retire professors because their pensions are not paid by his institution, but from an outside source. There is no more reason for retiring professors at sixty-five than justices of the supreme court. There should be pensions (or still better full salaries after long terms of service) for disability, but these should be paid by the university. It would have been far better if the Carnegie Foundation had given its income as an endowment to one institution after another for the establishment of a pension system. Its present financial difficulties would have been avoided, and the dangers of a centralized autocracy would have been escaped.

It is to be hoped that when the trustees of the foundation abandon the retiring allowances at the age of sixty-five years, they will do so in a manner that will "encourage, uphold and dignify the profession of the teacher and the cause of higher education."

J. McKEEN CATTELL

#### SPECIAL ARTICLES

##### THE TYPE OF COLUMBINA SPIX

A FEW years ago I discussed the question of *Columbina* vs. *Chamepeleia* in *The Auk*,<sup>1</sup> contending that the designation of *Columba passerina* Linn. by Gray in 1840 as the type of *Columbina* was valid, and that his later designation of the same species as the type of *Chamepeleia* rendered *Chamepeleia* (Swainson, 1827) a synonym of *Columbina* (Spix, 1825). The genus *Columbina* originally contained four species, all described as new, one of

<sup>1</sup> Vol. XXV., 1908, pp. 301-306.